

Application No. 09/945,483

Attorney Docket No. 66251

DRAFT REMARKS

This is a draft response to the presently pending Office Action that was mailed on August 19, 2005. In that Action, Claims 1-10 are pending and stand rejected. The Office Action rejected claims 1-10 under 35 U.S.C. § 112, second paragraph, for being indefinite. However, the Office Action indicated that claims 2-4 and 6-8 would be allowable if rewritten to overcome the rejections under § 112 and included all the limitations of the base claim and any intervening claims. The Applicants traverse the rejections for the reasons stated below.

At the outset, Applicants acknowledge with appreciation the Examiner's indication that claims 2-4 and 6-8 would be allowable if rewritten to overcome the rejections under 35 U.S.C. § 112, second paragraph and included all the limitations of the base claim and any intervening claims.

Turning now to the rejections, claims 1-10 were rejected under § 112, second paragraph for being indefinite. Claim 1 recites:

A method of increasing utilization of user link bandwidth for a code division multiple access communications system comprising the steps of:

selecting a set of orthogonal complex codes each having a code length that is greater than a code length of an optimum real code and less than or equal to a spreading code length; and

transferring symbols across at least one of a plurality of user links to or from at least one of a corresponding plurality of user terminals wherein the symbols are represented by a corresponding one of the set of orthogonal complex codes.

The Office Action stated that the references to three code lengths (i.e., the optimum real code length, the orthogonal complex code length, and the spreading code length) in the claim rendered the claim indefinite. More specifically, the Office Action stated that these recitations were indefinite because “[t]he way the claim reads these three different types of code lengths could be irrespective of each other and could refer to any arbitrary code length.” The Applicants respectfully disagree with this assertion for the reasons stated below.

As stated in the specification, currently known orthogonal (real) codes have a length of  $2^n$ , where  $n$  is some positive integer. (Specification, page 1, lines 17-18). Available frequency bands are not necessarily integrally divisible by  $2^n$ , however, leaving portions of the band unusable. (Specification, page 2, lines 2-5). To alleviate this problem, the method recited in claim 1 selects a set of orthogonal complex codes having a code length that is greater than an optimum real code length, but less than or equal to a spreading code length. Thus, by using an

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orthogonal complex code having this specified length, most if not all of any remaining (and unused) bandwidth can be utilized.

As recited in the first paragraph of claim 1, a definite relationship exists between the three code lengths (i.e., the optimum real code length, the orthogonal complex code length, and the spreading code length). Specifically, as recited in the first paragraph of claim 1, the orthogonal complex code length is greater than the optimum real code length but less than or equal to the spreading code length.

Although, in some cases, the three code lengths may be calculated using common variables (i.e.,  $n$ , where  $n$  is an integer), in other cases, this may not necessarily be the case. Regardless, and as claimed, the relative length values will always be the same (relative to each other) no matter how the calculations are performed and no matter what formulas are used in the calculations. Of course, the lengths themselves can assume any number of values, but their relationship to each other will always remain fixed.

Furthermore, a person of ordinary skill in the art could easily determine examples of what these lengths could be. For instance, the real code length in some examples could be  $2^n$ , where  $n$  is some integer (see specification, page 1, line 18). In another example, as mentioned in the specification, a complex code could have length  $LP$  where  $L$  is a positive integer and  $P$  is  $2^n$ . (Specification, page 8, lines 11-13). In yet another example, the spreading code length may be determined to be the maximum ratio of bandwidth to symbol rate. A specific example of calculating the spreading code length (for a user link having 5MHz of available bandwidth and 144 kbps) is also given. (Specification, page 1, line 24 to page 2, line 1).

Thus, it is believed that the rejection made to claim 1 under 35 U.S.C. § 112 is traversed and claim 1 is allowable. The remaining independent claims 5 and 9 include language similar to claim 1 and it is believed that these claims are allowable for the same reasons as those given with respect to claim 1. The remaining claims depend directly or indirectly upon independent claims 1, 5, and 9. Since the independent claims are allowable, it is believed that the dependent claims are also allowable.

In view of the foregoing, it is submitted that the application is in condition for allowance which is respectfully requested. The Commissioner is hereby authorized to charge any additional fees which may be required in this application under 37 C.F.R. §§1.16-1.17 during its entire pendency, or credit any overpayment, to Deposit Account No. 50-0383. Should no proper payment be enclosed herewith, as by a check being in the wrong

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amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-0383.

Respectfully submitted,  
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Date: \_\_\_\_\_

By: \_\_\_\_\_

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